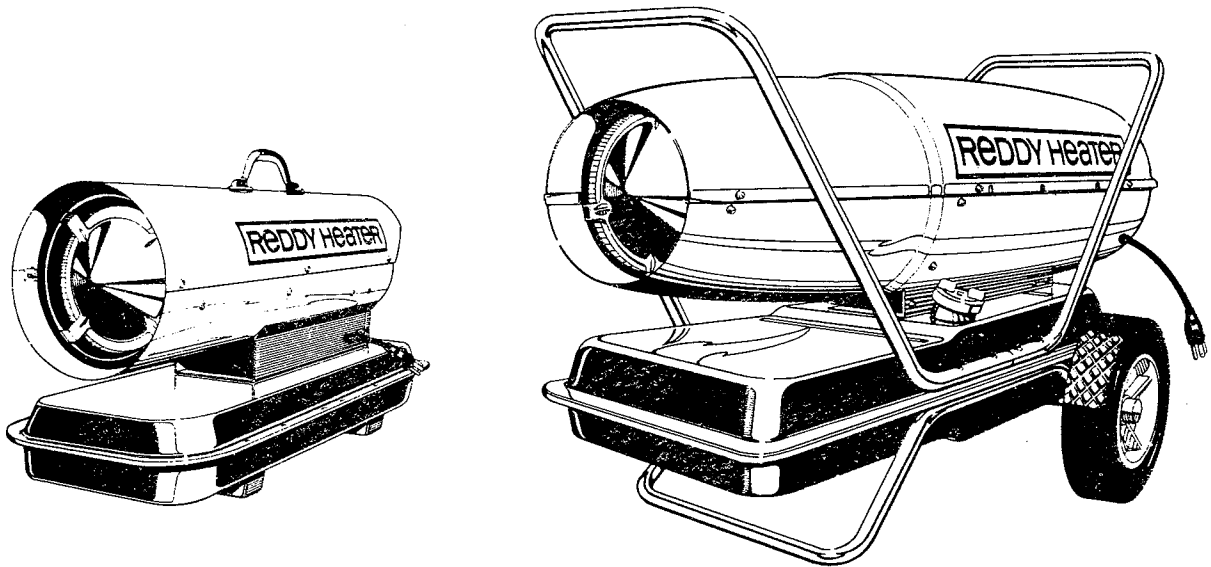


REDDY HEATER®

OPERATING, MAINTENANCE AND SERVICE MANUAL



30,000 BTU to 150,000 BTU



KOEHRING®

ATOMASTER DIVISION
BOWLING GREEN, KENTUCKY 42101



WARNING

Safety Requirements

IMPORTANT: Read and Understand Instruction Manual before Starting or Servicing! IMPROPER USE OF THIS HEATER CAN RESULT IN SERIOUS BODILY INJURY DUE TO HAZARDS OF FIRE OR EXPLOSION, CARBON MONOXIDE POISONING, BURN, AND ELECTRICAL SHOCK.

For Best Results, Use ONLY Kerosene or Fuel Oil. Refer to Owner's Manual for suitable alternate fuels. NEVER USE GASOLINE, NAPHTHA, PAINT THINNERS, ALCOHOL OR OTHER VOLATILE FUELS!

Use ONLY IN AREAS FREE OF FLAMMABLE VAPOR OR HIGH DUST CONTENT. NEVER USE HEATER WHERE GASOLINE, PAINT THINNER OR OTHER HIGHLY FLAMMABLE VAPORS ARE PRESENT.

Make sure hot air outlet is AT LEAST 5 FEET FROM COMBUSTIBLE MATERIALS. Fill fuel tank or move heater ONLY WHEN heater is UNPLUGGED.

NEVER USE HEATER IN ROOMS USED FOR SLEEPING.

USE ONLY IN WELL VENTILATED ROOMS' Provide ventilation of AT LEAST 3 SQUARE FEET FOR EACH 100,000 BTU OF RATING.

When used with THERMOSTAT, HEATER MAY START ANYTIME!

KEEP CHILDREN AWAY FROM HEATER AT ALL TIMES—NEVER LEAVE A HEATER PLUGGED IN WITHOUT AN ADULT PRESENT IF CHILDREN ARE LIKELY TO BE PRESENT.

Use ONLY with electrical voltage and frequency specified on model plate.

Use ONLY A PROPERLY GROUNDED THREE-WIRE EXTENSION CORD.

DO NOT MOVE, HANDLE OR SERVICE WHILE HOT OR BURNING.

Use ONLY in accordance with local Ordinances and codes.

NEVER attach duct work to front of heater.

Safety requirements and model plate data comply with AMERICAN NATIONAL STANDARD INSTITUTE, INC. Safety Requirements—ANSI A10.10-1970

TABLE OF CONTENTS

Congratulations – You have just purchased one of the finest oil-fired heaters on the market today. Your REDDY HEATER has been designed and engineered to provide you with years of warm comfort. You will need to read this manual carefully before using your REDDY HEATER.

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UNPACKING AND ASSEMBLY

Unpacking

1. Remove all protective material which may have been applied to the heater for shipment.
2. Remove the heater from the carton.
3. Check the heater for possible shipping damage, if any damage is found, IMMEDIATELY notify the dealer where you purchased the heater.
4. Follow the assembly instructions.

Assembly (Does not apply to model M30 and M50)

Some models are equipped with wheels and handles. These models are shipped with these items removed from the unit and can be found in the shipping carton along with the mounting hardware. The wheels, axle and mounting hardware are in a plastic package. The following items should be included.

- | | |
|--------------------------------|-------------------------|
| A) Heater Body | G) Eight (8) Screws |
| B) One (1) Front Handle | #10-24 x 1-3/4 in. |
| C) One (1) Rear Handle | H) Eight (8) Nut #10-24 |
| D) One (1) Wheel Support Frame | J) Two (2) Cap Nut |
| E) Two (2) Wheel | K) One (1) Fuel Cap |

Note: The front and rear handles are alike.

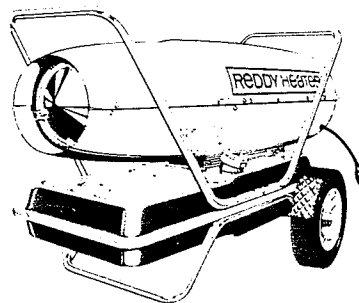
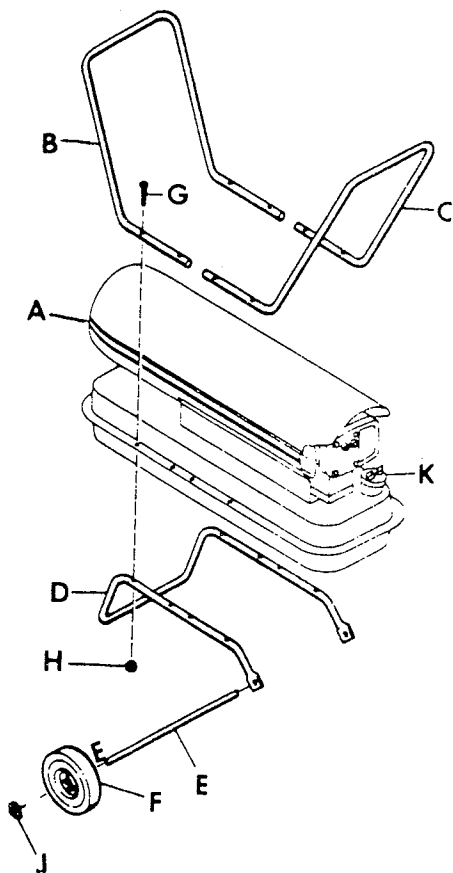
Tools Required

Medium Phillips Screwdriver, 3/8" Open or Adjustable Wrench, Hammer.

Assembly Instructions

DO NOT TIGHTEN NUTS UNTIL STEP 5

1. Slide the axle (E) through the wheel support frame (D). Install the wheels (F) on the axle (E). IMPORTANT: The extended hub of the wheel should be positioned toward the wheel support frame. Position the cap nuts (J) on the axle ends and gently tap with a hammer to secure.
2. Position the heater on the wheel support frame assembly with the motor end over the wheels.
3. Use four screws (G) and nuts (H) to attach the front handle to the top of the tank flange. The screws will go through the front handle, the tank flange and the wheel support frame. Install the four nuts (H) finger tight only.
4. Using four screws (G) and nuts (H) install the rear handle (C) as outlined in step 3.
5. Tighten all nuts.
6. Remove tape from the fuel filler neck and install the fuel cap.



VENTILATION

CAUTION

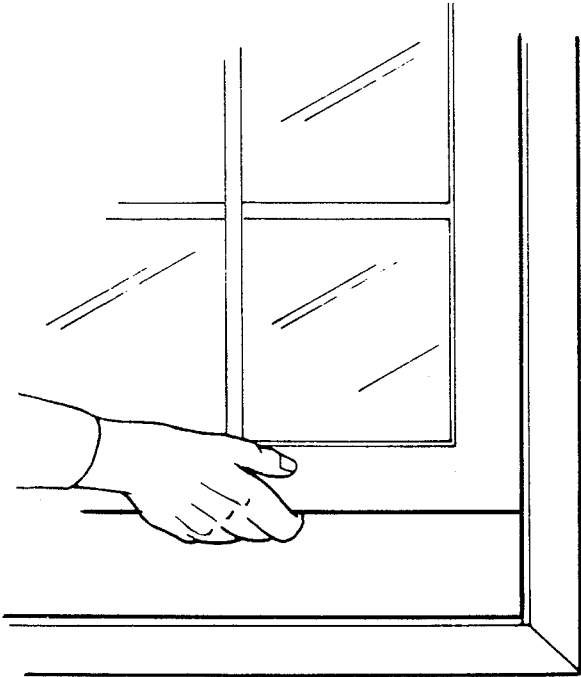
Use only in well ventilated areas — see chart below.

FRESH AIR OPENING REQUIREMENTS

Note: If more than one heater is being used provide additional fresh air.

Heater Size	Sq. Ft. Opening
30,000 BTU	1.0
50,000 BTU	1.5
66,000 BTU	2.0
110,000 BTU	3.0
150,000 BTU	4.5

EXAMPLE: A 50,000 BTU heater will require a two car garage door, raised two inches or a single garage door raised four inches. A window can also be used for ventilation. The 50,000 BTU heater requires at least 2 thirty inch windows raised 3 inches.



ALTERNATE FUELS

FUEL	ODOR	POSSIBLE ADDITIONAL MAINTENANCE	COLD WEATHER RECOMMENDATIONS
KEROSENE	VERY SLIGHT	NONE	-
FUEL OIL #1	VERY SLIGHT	NONE	-
FUEL OIL #2	SLIGHT	SEE NOTE 2	SEE NOTE 3
DIESEL #1 (OR DIESEL CB)	VERY SLIGHT	NONE	-
DIESEL #2 (OR DIESEL TT)	SLIGHT	SEE NOTE 2	SEE NOTE 3

NOTE:

1. For best overall results, kerosene, Fuel Oil #1 and Diesel #1 should be used when available. Fuel Oil #2 and Diesel #2 can be used with results noted above. These fuels are, however, recommended only when the preferred fuels are not available. Do not use gasoline or other volatile fuels.

2. Filters and nozzles may require more frequent cleaning/replacement, altitudes may affect combustion performance with #2 fuels.

3. Below 20° F, it is best to use Kerosene, Fuel Oil #1, or Diesel #1. Some #2 Fuel Oils and #2 Diesel Fuel may contain winterizing additives, which will allow operation at colder temperatures. It is best to check with your local fuel dealer to determine if these additives are present.

FUEL SOURCE

Fuels can be purchased at your local gasoline service station or look in the telephone directory under "kerosene" to find another source.

SPECIFICATIONS

	M30	M50A	M66	M100D	M150S		
OUTPUT RATING (BTU PER HOUR)	30,000	50,000	63,000	90,000	150,000		
FUEL	SEE FUEL CHART, PAGE FOUR (SAME ALL MODELS)		(SAME ALL MODELS)				
FUEL TANK CAPACITY, U.S. GALLONS	2.25	3.50	4.50	9.00	13.50		
FUEL CONSUMPTION, APPROX. U.S. GAL. PER HOUR	0.23	0.36	0.45	0.64	1.10		
ELECTRIC REQUIREMENTS	115V, 60Hz		(SAME ALL MODELS)				
AMPERAGE (DURING NORMAL RUN)	2.35	2.85	4.00	4.00	5.00		
STARTING AMPS	4.00	4.00	8.00	9.00	10.00		
MOTOR RPM	1665	1675	3350	3450	3450		
AIR OUTPUT (CFM)	103	145	160	380	538		
AIR PUMP PRESSURE (PSI)	3.00	3.60	4.00	4.00	5.00		
WEIGHT (APPROX. LBS.)	SHIPPING		32	38.00	56.00	70.00	94.00
	WITHOUT FUEL		28	34.00	50.00	58.00	77.00
DUCT	NO DUCT RECOMMENDED		(SAME ALL MODELS)				

OPERATION

THEORY OF OPERATION

There are four basic systems within the heater: The fuel system, the air system, the ignition system, and the flame-out control system.

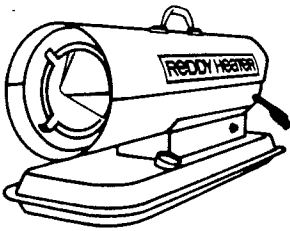
An air pump on one end of the motor shaft forces air through the air tube and out of the burner nozzle. The moving air creates a pressure differential in the burner head causing fuel to be drawn from the tank. The fuel and air mix is sprayed into the combustion chamber in a fine mist.

Additional air is supplied to the combustion chamber by a fan on the opposite end of the motor shaft. Ports around the burner head allow a portion of the air being moved by the fan to enter the combustion chamber to support combustion. The remaining air is

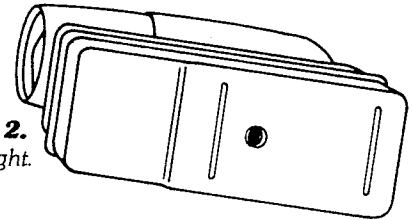
directed around and over the combustion chamber. This air mixes with the heated air from the combustion chamber and is ejected as a jet of clean, heated air.

The ignition system consists of a transformer and spark plug. The transformer a spark between the electrodes of the spark plug and ignites the fuel and air mixture within the combustion chamber. The spark plug fires constantly during operation.

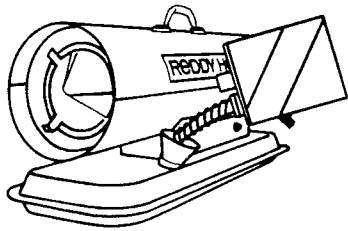
A light sensitive cell detects a flame, which the flame-out control automatically trips if the flame fails, thereby causing the heater to shut down.



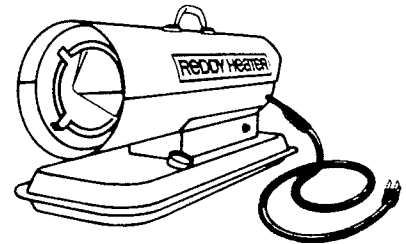
- 1.**
Check reset button to be sure it is pushed in.



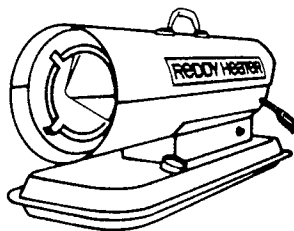
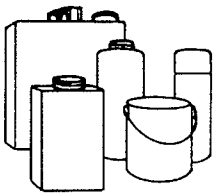
- 2.**
Check drain plug to be sure it is tight.



- 3.**
Fill fuel tank with correct fuel. See charts on fuel. Figure

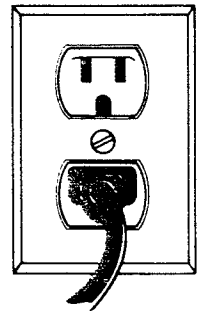


- 4.**
The heater has a short power cord: use an extension cord of at least six (6) feet long.

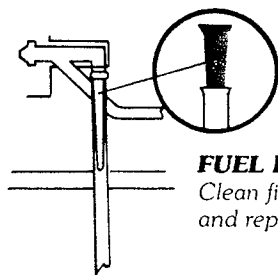


- 5.**
Make sure the front, Hot Air outlet, is at least five (5) feet from any flammable materials.

- 6.**
Heater will start when plugged in. Outlet must be a grounded 110-120 volt, 60 cycles a.c.

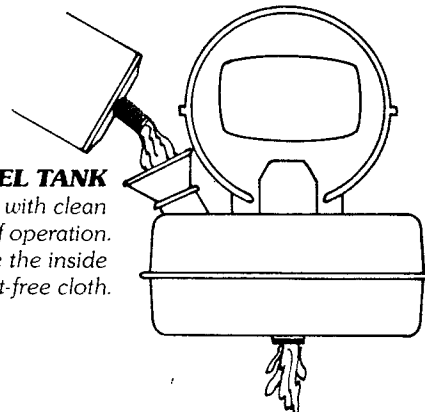


MAINTENANCE



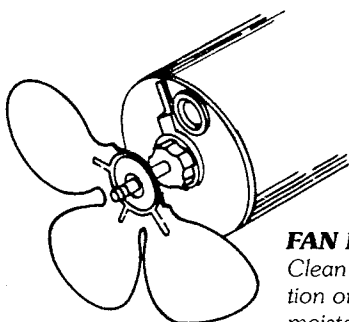
FUEL FILTER

Clean filter at least twice each season and replace as needed.



FUEL TANK

Drain and flush fuel tank with clean fuel after every 150 hours of operation. Before replacing cap, wipe the inside with a lint-free cloth.

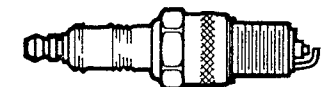
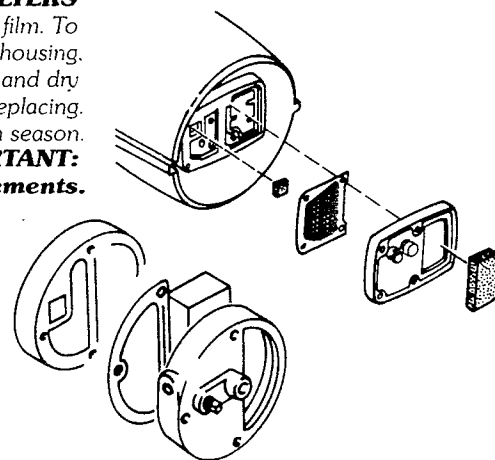


FAN BLADES

Clean after every 500 hours of operation or as necessary. Use a soft cloth moistened with kerosene or solvent, then dry thoroughly.

AIR FILTERS
Check frequently for dust film. To clean, remove the filter from housing, wash with mild detergent and dry thoroughly before replacing. Replace once each season.

IMPORTANT:
Do Not oil the filter elements.



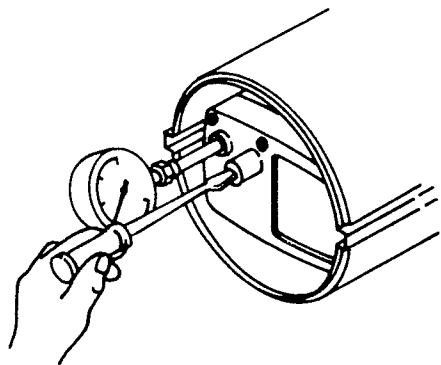
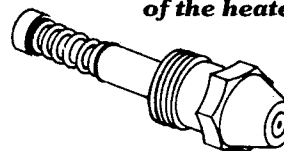
SPARK PLUG

After every 300 hours of operation, clean and adjust spark plug electrodes. Adjust gap or replace spark plug as required. CAUTION: BE SURE heater is unplugged.

NOZZLE

Clean at least once during heater season. Remove burner head. Use a socket wrench only to remove nozzle. Blow through the face (outlet) end ONLY.

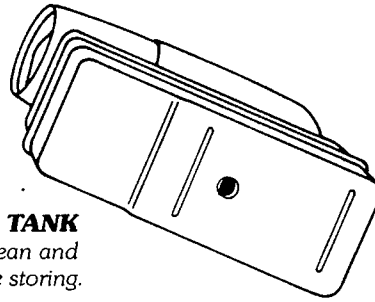
IMPORTANT: Protect nozzle face from damage while out of the heater.



STORAGE

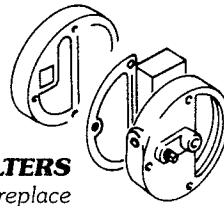
Store heater in a dry location, free of corrosive fumes and dust. For Koehring heater covers, see page 9.

WARNING: Always unplug heater before servicing.



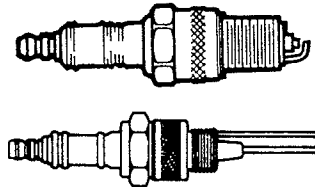
FUEL TANK

Drain all fuel from tank. Clean and flush tank before storing.



AIR FILTERS

Remove and clean or replace filters if necessary.



SPARK PLUG

Clean and adjust spark plug, or replace if necessary.

TROUBLE SHOOTING

SYMPTOM	POSSIBLE CAUSE	CORRECTIVE ACTION
Motor does not start; thermostat (if used) is set to call for heat.	Electrical Troubles	
	1. No power or low voltage at heater.	1a. Be sure power is reaching heater; check condition of heater cord. Repair or replace as needed. b. Use extension cord with wires heavy enough to carry the electrical load of the heater. c. Be sure voltage at outlet is same as shown on heater instruction plate.
	2. Damaged motor binding fan-end bearing. Motor start relay.	2a. Check motor. b. Replace a defective motor. c. Lubricate motor (Fan-end only).
	3. Thermostat damaged (if used).	3. Replace. Not a serviceable part.
	Mechanical Troubles	
	1. Dry bearing on fan-end of motor.	1a. Lubricate motor. b. If lubrication does not solve problem, check pump.
2. Fan obstructed by mechanical damage or dirt.	2a. Check for bent outer shell. b. Check for damaged fan; replace if defective. c. Check for damaged motor mount.	
Heater will not ignite, but motor runs for a short time.	Fuel System Troubles	
	1. Fuel tank empty, water in fuel, wrong fuel.	1a. Check for water in tank; clean tank and fuel filter if water is found. (Water in the tank will form globules in the bottom which you can see.) b. Fill tank with fresh, clean fuel.
	2. Fuel filter clogged.	2. Remove and wash in clean fuel. Blow dry and replace.

TROUBLE SHOOTING

SYMPTOM	POSSIBLE CAUSE	CORRECTIVE ACTION
(Continued) Heater will not ignite, but motor runs for a short time.	3. Nozzle plugged or defective.	3a. Clean by blowing compressed air through nozzle from outlet end of nozzle. b. Replace nozzle if cleaning does not solve the problem.
	4. Very low temperature may cause fuel to thicken and not flow.	
	5. Dirty air filters.	5. Be sure air filters are clean.
	6. Air leak at fuel filter.	6. Check fuel filter for air leaks and for tightness of fit where it is connected to fuel line.
	Ignition Troubles	
	7. Defective spark plug. (Wrong gap, plug wet with fuel or electrodes carboned, or plug damaged.)	7. Gap between electrodes should be .050" or about thickness of a dime. Adjust electrode gap. Inspect plug for worn or eroded electrodes. Replace a damaged spark plug.
	8. Spark plug wire disconnected from plug or from terminal of transformer.	CAUTION: Disconnect heater cord! 8. Check at plug and transformer to be sure wire is tight at both ends.
Heater burns, but puffs of smoke can be seen; heater will not burn steady; heater burns with odor; heater smokes continuously.	Improper Fuel-Air Mixture (Not enough fuel)	
	1. Heater running out of fuel; water condensation in fuel tank; wrong fuel.	1a. Shut heater off; check fuel tank. If you can see globules of water in the bottom, drain and flush the tank and filter with clean fuel. b. Refill with fresh, clean fuel.

TROUBLE SHOOTING

SYMPTOM	POSSIBLE CAUSE	CORRECTIVE ACTION
(Continued) Heater burns, but puffs of smoke can be seen; heater will not burn steady; heater burns with odor; heater smokes continuously.	2. Dirty air filters causing reduced air flow through nozzle, resulting in low fuel flow.	2. Remove and clean the air filters. Be sure air intake is not blocked.
	3. Fuel filter loose, dirty or connection loose.	3a. Remove and wash fuel filter in clean fuel. b. Check condition of connection between fuel line and burner. c. Replace with new fuel line.
	4. Dirty nozzle.	4a. Remove and clean the burner head. b. Blow compressed air through nozzle from outlet end. c. Never use a drill, wire, or other tool to open a nozzle passage.
	5. Fan blade.	5. Check for excessive dirt accumulation on fan blade which could be causing motor to slowdown.
	6. Loose air output line connections between filter housing and burner.	6. Be sure connections are tight.
	7. (Remote possibility). Rubber sleeve on shank of nozzle is leaking.	7. If heater puffs intermittently, replace the rubber sleeve. (Handle parts carefully to prevent damage, assemble them carefully to preserve airtightness.)
	Flames come out front of heater.	Improper Fuel-Air Mixture (Too much fuel, or not enough air for amount of fuel being supplied.)
1. Dirty fan, or air passageway through heater blocked by dirt or trash.		1. Clean the fan. Be sure the air passageway through the heater is clean. Keep the heater clean.
2. Fan loose or improperly located on shaft.		2. Check fan; correct if not right.
	3. Bent or damaged fan.	3. Replace. Do not attempt repair of fan.

TROUBLE SHOOTING

SYMPTOM	POSSIBLE CAUSE	CORRECTIVE ACTION
Heater cycles intermittently.	Electrical System Troubles	
	1. Thermostat set too low. (if used)	1. Set thermostat to a higher temperature for more even operation.
	2. Defective thermostat. (if used)	2. Replace a defective thermostat.
	3. Low voltage causing tripout of motor.	3. Check power line voltage. Use extension cord with proper size wire.
4. Defective electrical supply or defective connections.	4a. Be sure extension cord and heater service cord are in good condition, without intermittent open circuits. b. Check mechanical and electrical soundness of all wiring connections in the heater and service cord.	
Heater ignites, but button of safety control circuit breaker pops out anyway.	1. Defective photo cell.	1. Check to see if glass face of cell is so dirty it can't "see" the flame; clean glass if dirty. Replace with a cell that is known to be good.
	2. Defective safety control.	2. Replace with a control that is known to be good.
	3. Defective electrical connections in circuit through cell and control relay.	3. Be sure all solder joints and wiring connections are secure. Check wiring diagram.
Safety Control circuit breaker fails to trip when a no-flame condition exists.	1. Defective circuit breaker.	1. Replace with a circuit breaker that is known to be good.
	2. Control dirty or defective.	2. Replace defective control with one that is known to be good.
	3. Photocell electrical leads shorted.	3. Check photocell leads for shorted leads. Replace photocell if damaged.
Button on safety control circuit breaker won't stay in when pressed.	1. Resetting is tried too soon after the breaker trips. 2. Defective circuit breaker. 3. Photo cell circuit open.	1. Wait 5 minutes and try again. 2. Replace with a circuit breaker that is known to be good. 3. Check photocell for open condition. Replace if damaged.

PARTS

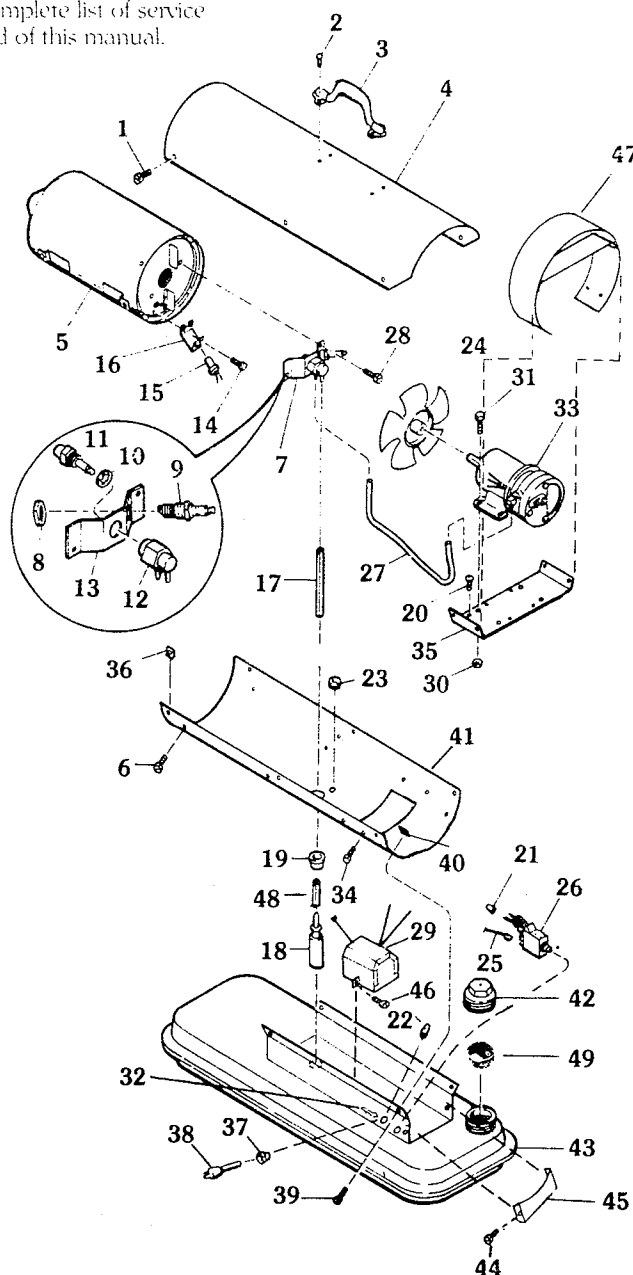
When ordering your part, be sure to provide all pertinent facts when you call or visit your service dealer.

The model and serial number of your portable heater will be found on a decal toward the rear (motor end) of your unit. When ordering repair parts always give the following:

- A) Part Number
- B) Model Number
- C) Description

NOTE: All painted service parts will be painted a common color of a baked enamel finish; these parts may not match your present color -- These parts may be repainted if necessary.

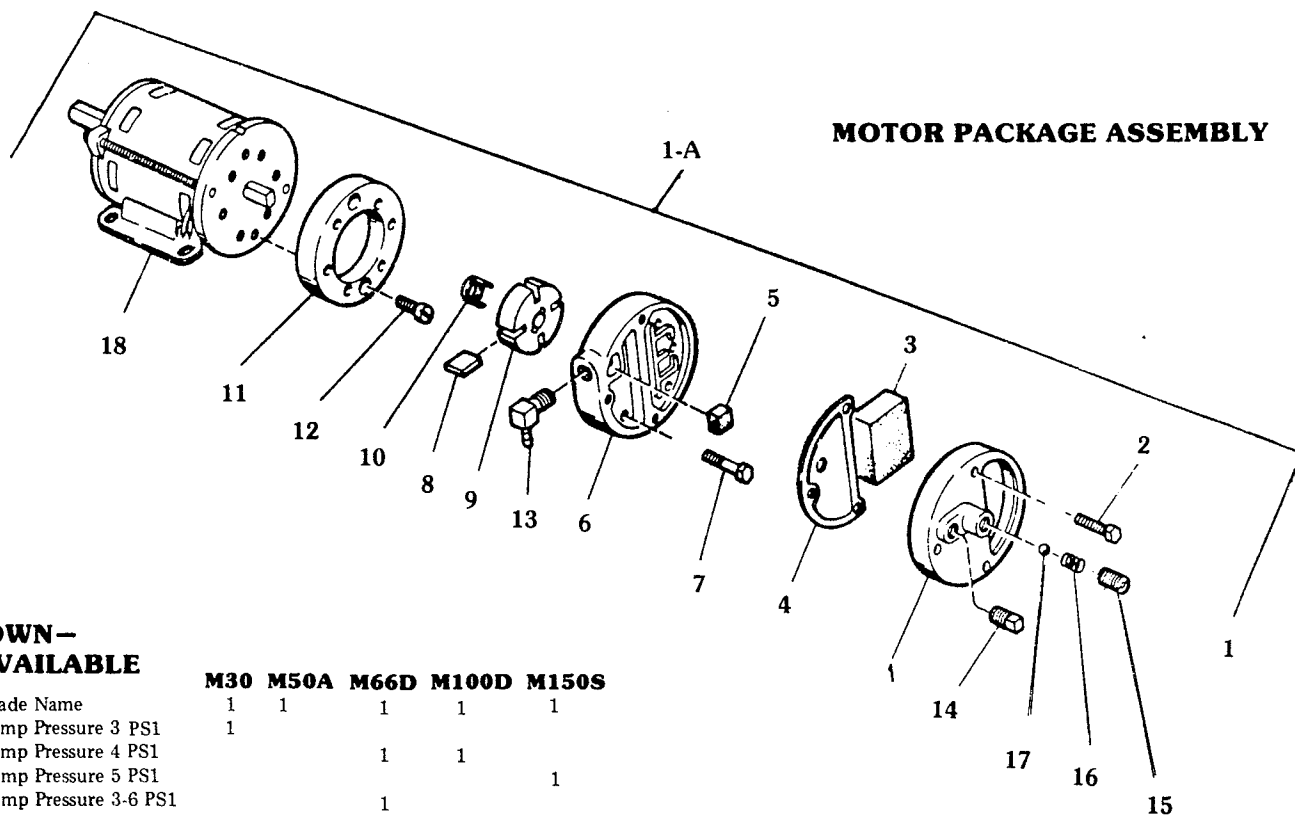
You will find a complete list of service dealers at the end of this manual.



In. No.	Part Number	Part Name	M30	M50A
1	M11084-26	Screw, Hex Hd., 10-12x3/8 in.	15	6
	M30725-04	Upper Shell Assembly	1	1
2	M17539-9	Rivet	2	2
3	M12853	Handle	1	1
4	M30724AC	Shell Upper	1	1
5	M30883-01	Chamber, Combustion Assembly	—	1
	M29634-01	Chamber, Combustion Assembly	1	—
6	M11084-26	Screw, Hex Hd., 10-12x3/8 in. (Holds Chamber To Lower Shell)	4	4
7	M29707-01	Burner Head Assembly	1	—
	M29707-02	Burner Head Assembly	—	1
8	M29824	Nut, Special, 14 M/M	—	—
9	M29835	Spark Plug	1	1
10				
10	M16741-18	Ring, Retainer	1	1
11	M29681	Nozzle, Siphon	1	—
	M30875	Nozzle, Siphon	—	1
12	M29805	Adapter, Nozzle	1	1
13	M29615-01	Bracket, Assembly	1	1
14	M10908-1	Screw, Hex Hd., 6-32x1/4 in.	2	2
15	M16656-1	Photo Cell Assembly	1	1
16	M16660	Bracket, Photo Cell	1	1
17	M29652-03	Tubing, Fuel Line	1	1
18	M29814-01	Filter Assembly, Fuel	1	1
19	M10990-3	Bushing, Rubber	1	1
20	M11024-26	Screw, Hex Hd., 10-12x3/8 in. (Grounding Screw)	1	1
21	M13942-5	Connecting Wire	2	2
22	M13942-7	Connector, Wire	2	2
23	1000576	Grommet	2	2
24	M29678	Fan	1	—
	M30884	Fan	—	1
25	M16841-16	Wire Assembly	1	1
26	M28898-03	Flame Out Control	1	1
27	M29652-01	Tubing, Air Line	1	1
28	M11084-26	Screw, Hex Hd., 10-12x3/8	2	2
29	M16697-02	Transformer, 5000 Volt	1	1
30	N7C-3C	Nut No. 10-24	4	4
31	M12461-50	Screw, No. 10-24x3/8 in.	4	4
32	M29800	Decal, Reset	1	1
33	M29750-01	Motor, Pump Assembly	1	—
	M29750-02	Motor-Pump Assembly (Ref. Figure For Detail)	—	1
34	M11084-26	Screw, Hex Hd., 10-12x3/8 in. (Hold Motor Support To Shell)	4	4
35	M29616	Bracket, Motor Mounting	1	1
36	M11271-6	Nut, Tinnerman	6	6
37	M1143-1	Bushing, Strain Relief	1	1
38	M10813-74	Extension Cord Assembly (Power Cord)	—	—
39	M11084-26	Screw, Hex Hd., 10-12x3/8 in. (Hold Lower Shell To Support)	4	4
40	M11271-6	Nut, Tinnerman	4	4
41	M3027AC	Shell, Lower	1	—
	M30763AC	Shell, Lower	—	1
42	M30715-01	Cap, Fuel	1	1
43	M30723-01AA	Tank, Fuel	1	—
	M30873-01AA	Tank, Fuel	—	1
44	M11084-26	Screw, Hex Hd., 10-12x3/8 in. (Holds Bracket Cover To Tank Support)	2	2
45	M30726AA	Bracket, End Cover	1	1
46	M11084-26	Screw, Hex Hd., 10-12x3/8 in. (Hold Transformer)	2	2
47	M31348-01	Support, Shell Assembly	—	1
48	M50238	Spacer, Filter	—	1
49	M50323	Screen, Filler Neck	1	1
50	M27417	Plug Drain	1	1

PARTS

Part No.	Number	Part Name or Description	M30	M50A
	M29750-01	Motor Package Assembly	1	—
1A	M29750-02	Motor Package Assembly	—	1
1	M29609	End Cover, Filter	1	1
2	M12461-31	Screw (Filter End Cover to Pump End Cover)	3	3
3	M29633	Intake Air Filter	1	1
4	M29612-01	Output Filter Assembly	1	1
5	M29632	Filter, Lint	1	1
6	M29608	End Cover, Pump (Port Plate)	1	1
7	M12461-31	Screw (end cover to Motor)	6	6
8	M8643	Blade	4	4
9	M22456-1	Roter, Pump	1	1
10	M22009	Insert, Roter	1	1
11	M8645	Pump Body	1	1
12	FHPP3-4C	Screw (Pump Body Motor) 10-32 x 1/2	2	2
13	M50016	Elbow 90°	1	1
14	M22997	Plug, Socket Hd.	1	1
15	M27694	Screw, Pressure Adjustment	1	1
16	M10993-1	Spring, Compression (Pressure Relief)	1	1
17	M8940	Ball, 1/4 in. dia.	1	1
18	M30876-01	Motor	—	1
	M29780-01	Motor	1	—



MOTOR PACKAGE ASSEMBLY

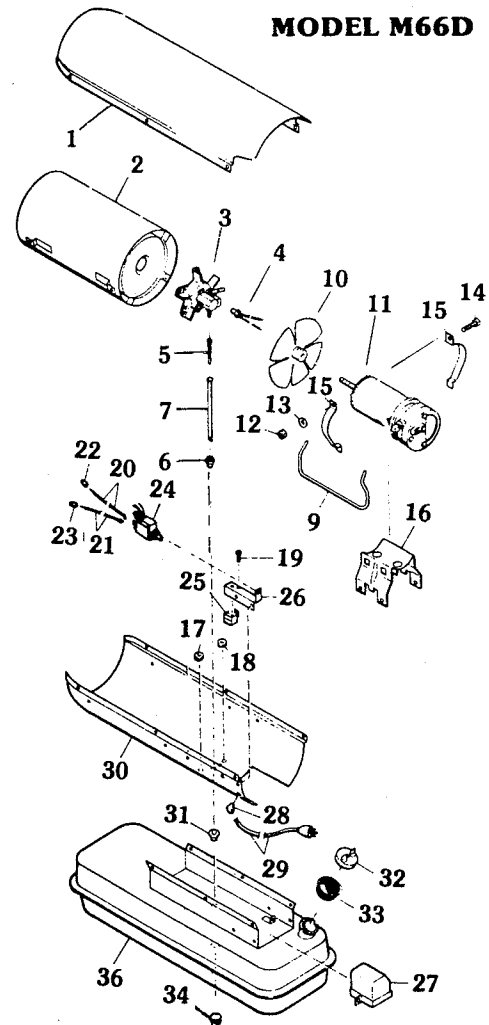
**-NOT SHOWN-
DECALS AVAILABLE**

		M30	M50A	M66D	M100D	M150S
M19457	Trade Name	1	1	1	1	1
M20532-5	Pump Pressure 3 PS1	1				
M20532-6	Pump Pressure 4 PS1			1	1	
M20532-7	Pump Pressure 5 PS1					1
M20532-8	Pump Pressure 3-6 PS1			1		
M22743	Warning	1	1	1	1	1
M30728	Wiring Diagram	1	1			
M25352	Wiring Diagram			1	1	1
M50623	Operation Instruction	1	1	1	1	1
M50624-09	Model Data	1				
M50624-11	Model Data				1	
M50624-14	Model Data					1
M50624-16	Model Data			1		
M50624-26	Model Data		1			
M50011	Spark Plug	1	1			
M50838	Warning A.R.L.	1	1	1	1	1

PARTS

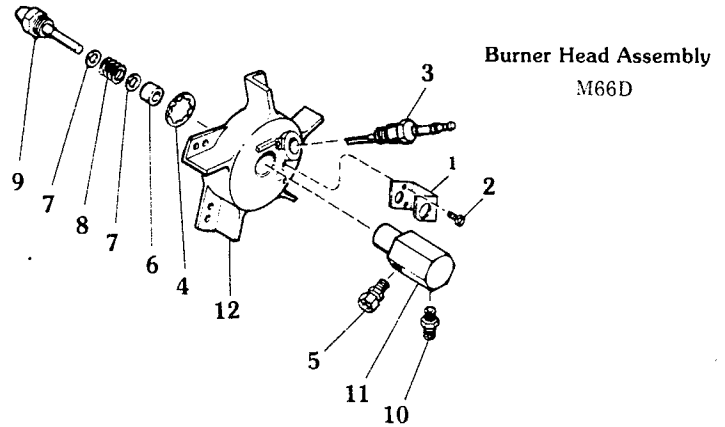
Part No.	Number	Part Name	Qty.
1	M26207E	Shell, Upper	1
-	M11084-26	Screw, Hex hd., No. 10-12x3/8 in.	6
-	M11271-6	Nut, Tinnerman	6
2	M50248-1	Combustion Chamber Assy.	1
3	M23443-3	Burner Head Assembly	NA
4	M16656-14	Photocell and Bushing Assy.	1
5	M19630	Filter, Fuel	1
6	M13849	Nut, Flared	1
7	M16790-14	Tube Fuel Filter	1
9	M50814-01	Air Line	1
10	M25727	Fan, 25/32 Pitch	1
	SK4-2-1/2K	Setscrew, Socket Hd., capt. pt. 1/4-28x5/16 (furnished with fan)	2
11	M31306-06	Motor Package Assembly	1
12	NPC-4	Nut, Plain, Hex, 1/4-20	2
13	WLM-4	Lockwasher, 1/4 in.	
14	HC4-10C	Screw, Hex hd. 1/4 20x1 1/4 in. (AP)	
15	M16661	Clamp, Motor	2
16	M25059	Bracket, Support Motor	1
	M11084-27	Screw, Hex hd. No. 10-12x 1/2 in.	4
17	1000576	Grommet	2
18	1000577	Grommet	2
19	M11084-26	Screw, Hex hd. No. 10-12x3/8 in. (Grounding)	1
-	M11084-26	Screw, Hex hd. No. 10-12x3/8 in. (Relay Bracket)	2
20	M16841-15	Wire Assembly	2
21	M16841-16	Wire Assembly	2
22	M13942-5	Connector Wire	2
23	M13942-7	Connector Wire	1
24	M28898-03	Safety Control Assy.	1
25	M25061-1	Relay, Motor Start	1
-	RC2-2-5C	Screw, Rd. hd., 8-32x5/16 in.	2
26	M25035	Bracket, Relay	1
27	M16697-02	Transformer Assembly	1
	M11084-27	Screw, Hex hd., 10-12x 1/2 in.	2
28	M11143-1	Bushing, Strain Relief	1
29	M10813-74	Extension Cord Assembly	1
30	M26208E	Lower Shell	1
	M11084-26	Screw, Hex hd., 10-12x3/8 in.	6
31	M10990-3	Bushing	1
32	M23284	Cap, Filler Neck	1
33	M50323	Screen, Filler Neck	1
34	M27417	Drain Plug	1
36	M27553-01AA	Fuel Tank Assembly	1

Heater Exploded View
MODEL M66D

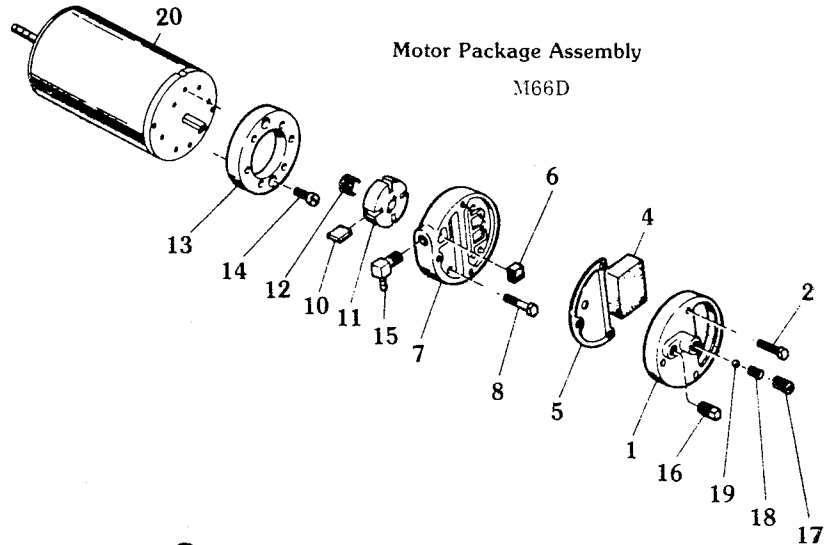


PARTS

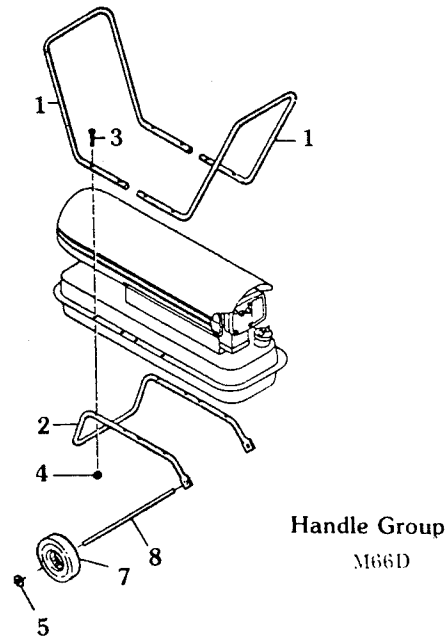
Part No.	Number	Part Name	Qty.
	M23443-8	Burner Head Assembly	Ref.
1	M16660	. Bracket, Photo Cell	1
2	*M10908-1	. Screw, Hex hd., Self-tapping, No. 6-32x $\frac{1}{4}$	2
3	M10962-2	. Spark Plug	1
4	M16741-18	. Ring, Retaining	1
	M23151-4	. Nozzle Adapter Assembly	1
5	M50817-01	. Fitting Barb	1
6	M8882	. Sleeve, Nozzle Seal	1
7	M10659-1	. Washer, Nozzle Seal	2
8	M10809-1	. Spring Nozzle Seal	1
9	M26316	. Nozzle, Aspirating	1
10	M16791	. Connector, Male	1
11	M16535	. Adapter, Nozzle	1
12	M25020	. Body, Burner Head	1



Part No.	Number	Part Name	Qty.
	M31306-06	Motor Package Assembly	Ref.
1	M29609	. End Cover, Filter	1
2	*M12461-31	. Screw, Hex hd., No. 10-32x1	3
4	M29633	. Intake Air Filter	1
5	M29612-01	. Output Filter Assy.	1
6	M29632	. Filter, Lint	1
7	M29608	. Front Cover, Pump (Port Plate)	1
8	*M12461-32	. Screw, Hex hd., No. 10-32x1- $\frac{1}{8}$	6
10	M8643	. Blade, Pump	4
11	M22456-1	. Rotor, Pump	1
12	M22009	. Insert, Rotor	1
13	M8645	. Pump Body	1
14	*FHPE3-4C	. Screw (Pump Body to Motor)	2
15	M50816-01	. Fitting Barb	1
16	M22997	. Plug	1
17	M27694	. Screw, Pressure Adjustment	1
18	M10993-1	. Spring, Compression (Pressure Relief)	1
19	M8940	. Ball, $\frac{1}{16}$ in. dia.	1
20	M25022-1	. Motor	1



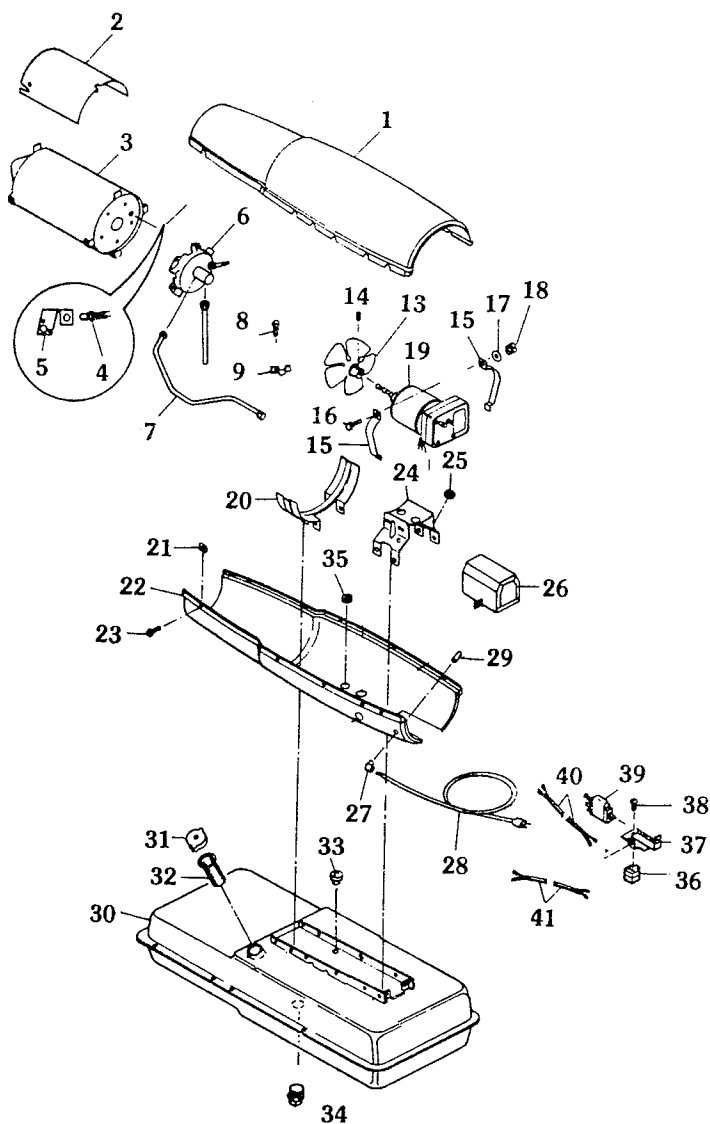
Part No.	Number	Part Name	Qty.
1	M26287-3	Handle, Front and Rear	2
2	M26205-3	Frame, Wheel Support	1
3	M12345-33	Screw, Oval hd., 10-34x1 $\frac{1}{2}$ in.	8
4	NTC-3C	Nut, Torque lock No. 10-24	8
5	M28526	Nut, Cap	2
7	M26307	Wheel	2
8	M16801-6A	Axle	1



Part No.	Number	Part Name	M100D	M150S
1	M13134-3D	Shell Assembly, Upper	1	—
	M17015-1D	Shell Assembly, Upper	—	1
2	M16679	Deflector, Heat (M150 only)	—	1
3	M16781-4	Chamber, Combustion, Assembly	1	—
	M16887-6	Chamber, Combustion, Assembly	—	1
	M11084-27	Screw, Hex Hd., 10-12x ³ / ₄ , Attaches Combustion Chamber Front	4	4
	M11084-29	Screw, Hex Hd., 10-12x ³ / ₄ , Attaches Combustion Chamber, Rear	2	2
4	M16656-4	Photo Cell Assembly	1	1
5	M16660	Bracket, Photo Cell	—	—
	M10908-1	Screw, Hex Hd., 6-32x ¹ / ₄ , Attaches Photo Cell Bracket	2	2

6	M23150-7	Burner Head Assembly (See Figure For Details)	1	—
	M16803-4	Burner Head Assembly (See Figure For Details)	—	1
	M11084-27	Screw, Hex Hd., 10-12x ¹ / ₂ , Attaches Burner Head	3	3
7	M50814	Airline, Includes Sleeves, Nuts	1	—
	M50387-02	Airline, Includes Sleeves, Nuts	—	1
8	M12461-27	Screw, 10-32x ¹ / ₂	1	1
9	M50873-01	Clamp, Airline	2	2
13	M23147	Fan	1	—
	M17058	Fan	—	1
14	SF4-2-5K	Set screw, Socket Hd., Cup Point ¹ / ₄ -20, Attaches Fan to Motor Clamp	2	2
15	M16661	Clamp, Motor	4	4
16	HC4-12C	Screw, Motor Clamp, ¹ / ₄ -20x 1 ¹ / ₂	2	2
17	WLM-4	Lockwasher ¹ / ₄ in.	2	2
18	NPC-4C	Nut, Hex ¹ / ₄ -20	2	2
19	M23149-13	Motor & Pump Assembly (See Figure For Details)	1	—
19	M17875-14	Motor & Pump Assembly—See Figure For Details	—	1
20	M12330	Bracket, Shell Support	1	—
	M12828	Bracket, Shell Support	—	1
	M11084-27	Screw, Hex Hd., 10-32x ¹ / ₂ , Attaches support bracket to shell and fuel tank	4	4
21	M11271-6	Nut, Tinnerman	6	8
22	M16777D	Shell, Lower	1	—
	M16810D	Shell, Lower	—	1
23	M11084-27	Screw, Hex Hd., 10-12x ¹ / ₂ (Attaches Lower Shell To Upper Shell)	6	8
24	M25059-02	Bracket, Motor Support	1	—
	M16645	Bracket, Motor Support	—	1
25	1000577	Grommet	1	1
26	M16697-02	Transformer, 5000 Volt	1	1
27	M11143-1	Bushing, Strain Relief	1	1
28	M10813-74	Cord, Power	1	1
29	M13942-7	Connector, (Wire Nut)	2	2
30	M27552-01AA	Tank, Fuel	1	—
	M27547-01J	Tank, Fuel	—	1
31	M23284	Cap, Fuel	1	1
32	M50323	Screen, Filler Neck	1	1
33	M10990-3	Bushing, Rubber, Fuel Line Into Fuel Tank	1	1
34	M27417	Plug, Drain — Includes "O" Ring	1	1
35	1000576	Grommet — Leads Thru Lower Shell	1	1
36	M12462-6	Relay, Motor Start	1	1
37	M25296-1	Bracket, Safety Control	1	1
38	M11084-27	Screen, 10-12x ¹ / ₂ , Grounding	1	1
39	M28898-03	Control, Flame Out	1	1
40	M16615-1	Harness, Wire	1	1
41	M9900-80	Harness, Wire	1	1

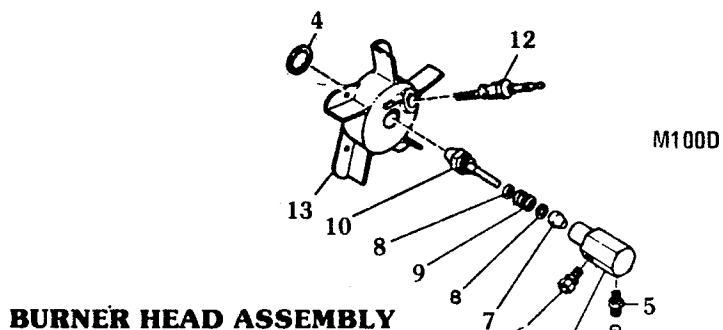
BASIC HEATER ASSEMBLY



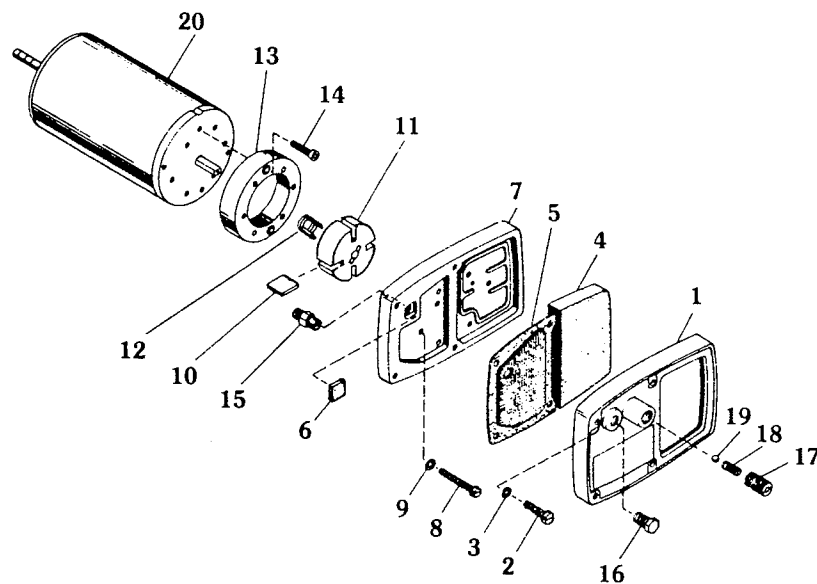
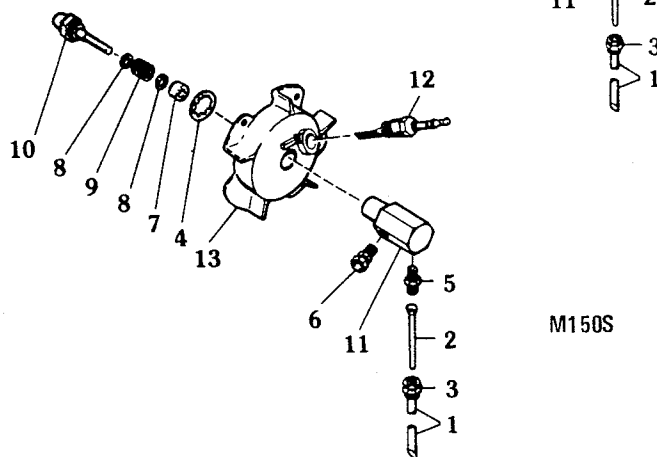
PARTS

Part No. Number	Part Name	M100D	M150S
M23150-7	Burner Head Assembly	1	—
M16803-4	Burner Head Assembly	—	1
1 M16790-8	Tube, Filter, (Fuel Line)	1	—
M16790-8	Tube, Filter, (Fuel Line)	—	1
2 M19630	Filter, Fuel	1	1
3 M13849	Nut, Flare	1	1
4 M16741-18	Ring, Retaining	1	1
M23151-1	Nozzle Adapter Assembly	1	
M16787-3	Nozzle Adapter Assembly		1
5 M16791	. Connector, Male	1	1
6 M50817-01	Fitting Barb	1	1
7 M8882	. Sleeve, Nozzle Seal	1	1
8 M10659-1	. Washer, Nozzle Seal	2	2
9 M10809-1	. Spring, Nozzle Seal	1	1
10 M23103	. Nozzle, 0.66 GPH	1	—
M18022	. Nozzle, 1.1 GPH	—	1
11 M16535	. Adapter, Nozzle	1	1
12 M10962-2	Spark Plug	1	1
13 M16534	Body, Burner Head	1	—
M23090	Body, Burner Head	—	1

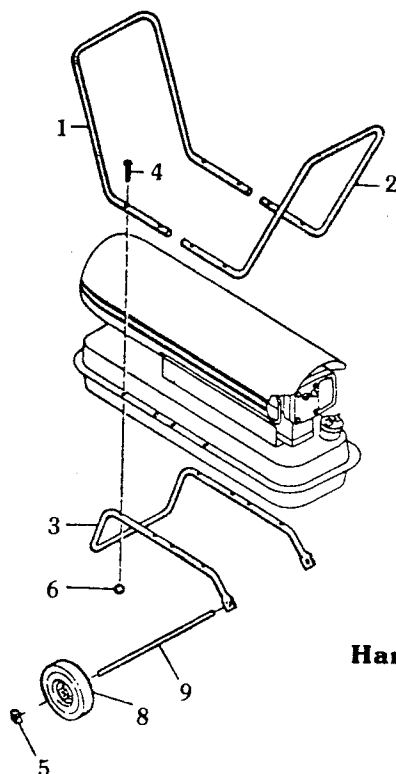
Part No. Number	Part Name	M100D	M150S
M23149-13	Motor & Pump Assembly—Complete	1	—
M17875-8	Motor and Pump Assembly—Complete	—	1
1 M16545	End Cover, Filter	1	1
2 M12461-31	Screw, Hex Hd., 10-32x 1 in. (Attaches Filter End Cover To Pump End Cover)	4	4
3 WL1-3C	Lockwasher, Internal Teeth, -10	4	4
4 M12179	Filter, Air, Intake	1	1
5 M12244-1	Filter Assembly, Output	1	1
6 M11637	Filter, Lint	1	1
7 M50545	Cover, End Pump (Port Plate)	1	1
8 M12461-32	Screw, Hex Hd., 10-32x1 1/8 in.	6	6
9 WL1-3	Lockwasher, Internal Teeth, No. 10	6	6
10 M8643	Blade, Pump	4	—
M8643-3	Blade, Pump	1	—
11 M22456	Rotor, Pump	—	1
M22456-3	Rotor, Pump	—	1
12 M22009	Insert, Hold Rotor To Motor Shaft	1	1
13 M	Body, Pump	1	1
M8645-3	Body, Pump	2	2
14 FHPF-4C	Screw, No. 10-32x7/8	1	1
15 M50817-01	Fitting Barb	1	1
16 M22997	Plug, Solid	1	1
17 M27694	Screw, Pressure Adjustment	1	1
18 M10993-1	Spring, Compression—Pressure Relief	1	1
19 M8940	Ball 1/4 in. dia.	1	1
20 M30718-01	Motor		1
M50450-01	Motor		1



BURNER HEAD ASSEMBLY



PARTS



Part No.	Part Number	Part Name	Qty.
1	M15813-3	Handle, Front	1
2	M15813-3	Handle, Rear	1
3	M12831	Frame, Wheel Support	1
4	M12345-33	Screw, Oval hd., 10-24x1 3/4 in.	8
5	NTC-3C*	Nut, Torque, Lock No. 10-24	8
6	M28526	Nut, Cap	2
8	M19294	Wheel	2
9	M16801	Axle	1

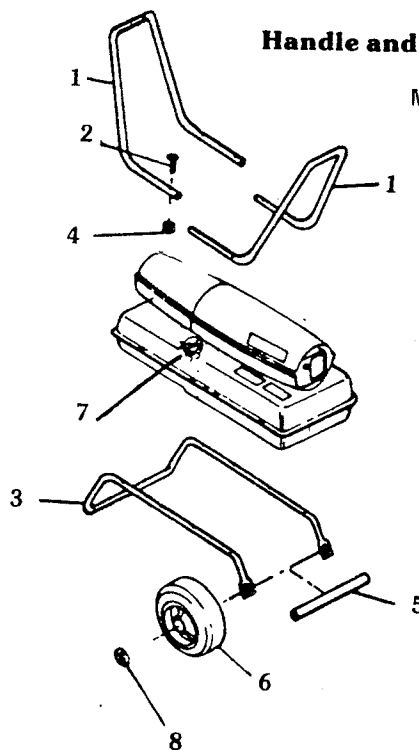
Handle and Wheel Group

M150S

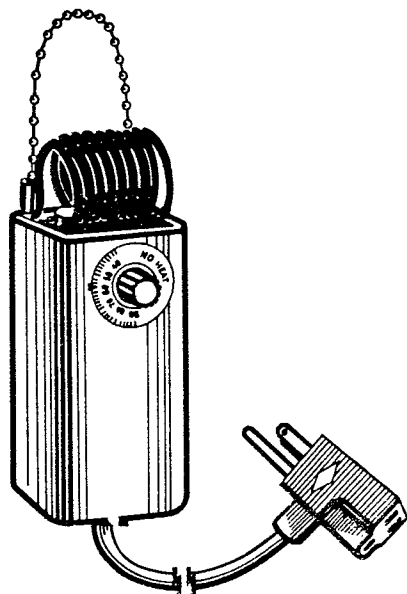
No.	Part Number	Part Name	Qty.
1	M15131-3	Handle, Front and Rear	2
2	M12345-34*	Screw, Handles and Wheel Support Frame to Fuel Tank	8
3	M12342-3	Wheel Support Frame	1
4	NTC-3C*	Nut, Hex 10-24, Torque Lock	8
5	M16801A	Axle	1
6	M19294	Wheel	2
8	M28526	Nut, Cap	2

Handle and Wheel Group

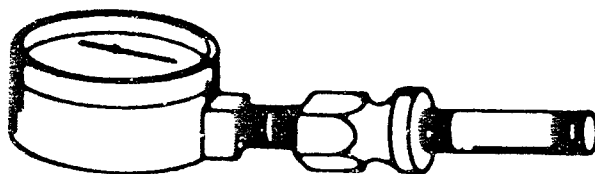
M100D



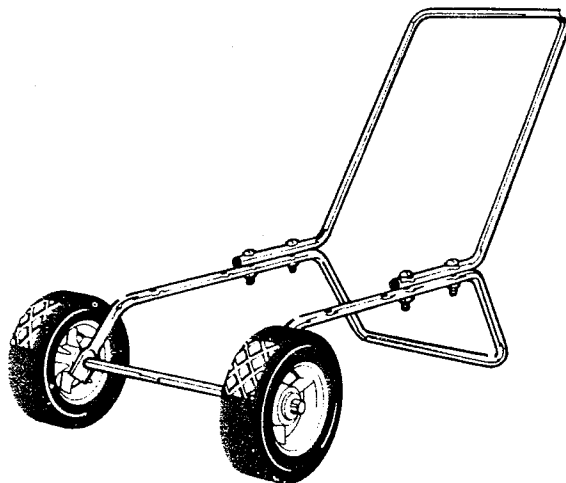
ACCESSORIES



HA1200 THERMOSTAT KIT



HA1180 PRESSURE GAUGE



HA1181 WHEEL KIT for M30 and M50A